

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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AUG 06 1996

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In the Matter of )

Advanced Television Systems and Their )  
Impact Upon the Existing Television )  
Broadcast Service )

MM Docket No. 87-268

To: The Commission

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REPLY COMMENTS OF DEMOGRAFX

DemoGraFX hereby submits reply comments on the Fifth Further Notice of Proposed Rule Making (the "Notice") in the above-captioned proceeding.

DemoGraFX has had numerous public and private meetings with proponents of the ACATS system. We have also read their comments in the press. DemoGraFX believes that the focus of some adversarial reply comments, made by those who are favoring adoption of ACATS, will be to deny that the DemoGraFX layered ATV system exists. They may even attempt to prove that it cannot exist, by citing references which indicate that there is a penalty for layering, and that achieving progressive scan thousand-line high frame rate images in the available 19.3 mbits/second is impossible.

After our complete and lengthy comments, rather than submit lengthy reply comments, DemoGraFX just wishes to re-iterate to the commission that our system does exist and that it does indeed achieve these goals. It can be independently verified, and we urge the commission to seek such independent and unbiased verification. It can be demonstrated, and we invite the commission to come see a demonstration at our facilities here in Los Angeles.

No amount of references, authoritative quotes, or engineering formulas can disprove the existence of our system. It does exist. It does work. It is very robust with every type of image. We have tested it as thoroughly as we know how. It is not a "paper system", but is rather based upon the solid ground of the MPEG-2 reference encoder and decoder which is a formal part of the MPEG-2 standard (known as "part 5"). It is fully compatible with MPEG-2, according to the experts within the MPEG-2 committee. It only differs in how the resolution layering is achieved.

DemoGraFX recommends that the commission recognize such anticipated reply comments for what they are, attempts to turn back the clock to the time before we had discovered how to achieve that which they would like to be unachievable. Technology cannot be un-discovered, so the commission must weigh the credibility and motives of those who wish to pursue the pretense that their arguments can un-invent the solutions to convergence that they wish did not exist.

Those who support the ACATS proposal don't wish for an efficient layered system to be possible, so that they can justify the 18 disparate formats. They don't wish the technology to exist to have full progressive scan at all formats, so that they can justify including the interlaced HDTV format. They don't wish for the DemoGraFX base layer parameters to produce such a high quality picture, so that they could justify needing unlayered HDTV formats.

Now that DemoGraFX has achieved both layering and full progressive scan at a quality level beyond their stated goals, their counter-argument seems to be reduced to the claim that our achievement did not happen, and is not possible. They may also claim that it is more expensive,

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although it is clearly less expensive to receive our base-layer than to receive the ACATS HDTV layers. Any independent evaluation will show that our base layer is significantly less expensive to decode than the ACATS ATV formats, and that it is comparable in cost to the "Main Level, Main Profile" interlaced SDTV formats, while providing a high quality progressive scan image, and eliminating the undesirable interlace associated with Main Level, Main Profile. The profile section in MPEG-2 is a politically motivated set of restrictions, including restrictions to 16:9 aspect ratio, 60 Hz, and interlace, all of which are inappropriate for adoption for the United States. The technology of MPEG-2 does not lie in the profiles and levels. Being MPEG-2 compatible does not need to mean compatible with the politically-motivated profiles and levels. Thus, we feel we are fully MPEG-2 compatible, even though we achieve goals not enabled by the profiles and levels, such as 72 Hz and non-interlaced 2048 x 1024 with two resolution and frame rate layers.

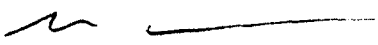
Those who support the ACATS proposal are also attempting to rule out our layered ATV system on procedural grounds. They have been suggesting that our ATV system should not be considered, because it was not discovered until after ACATS had finished its allegedly thorough testing. They also claim that our testing is not sufficient compared to the ACATS testing, even though ACATS accepted the twelve SDTV formats without even discussing the need for testing. The ACATS participants must have felt that the SDTV formats did not represent any technical challenge, and therefore required no testing. Similarly, DemoGraFX asserts that our system which utilizes the MPEG-2 reference encoder and decoder, has been extensively tested via software simulation and test sequences. Although we are pursuing further testing, and we are open to any tests that the commission would like to pursue, we believe that our system has been tested as thoroughly as the ACATS system. It would be good engineering practice to test any system which is a candidate for national adoption, as thoroughly as possible. With that perspective, neither the ACATS proposed system nor our system has yet been sufficiently tested, especially in areas of computer-compatibility and interactive use.

The difficult testing of the modulation and packet system has already been performed by ACATS and has been shown to produce satisfactory images and audio within the channel error rates tested. DemoGraFX layered ATV will also therefore produce the same level of satisfactory images, since we are based upon the same MPEG-2 data structure and coding methods as were tested by ACATS. Thus, our system has been vacuously tested by ACATS.

The goals which the commission wishes of convergence with computing, compatibility with new services, low costs for consumers, greatly improved picture quality, and desirability to the creative production community are all achieved by our DemoGraFX layered ATV system. The ultimate ACATS goal of full progressive scan, which they assert cannot be achieved, is now fully achieved by our system.

We ask the commission to look closely at the arguments of those who claim otherwise, to see if their underlying motivation is really to prevent these benefits and convergence. We offer a technical solution for these goals, and we seek for the commission to be fully aware of our technology before giving any further consideration to the ACATS proposal. It is our assertion that the 18-formats of ACATS would not be proposed had our technology been available, and that we provide the key to eliminate interlace from all future digital television standards in the United States. We are happy to provide the commission with the names of many experts who have seen our system demonstrated, and who can attest to its quality, capability, and efficiency.

Respectfully Submitted,

  
Gary Demos  
President/CEO, DemoGraFX